

The Reference culture (Ref) used in the examples is a commercially available yogurt starter culture and does not contain any of strains A-E.

### 3. Yogurt Preparation (All Examples)

**[0082]** The fermented milk used is obtained by supplementing pasteurized skimmed milk (Campina, The Netherlands) with skimmed milk powder and cream (containing 39% fat). The final recipe is described in the different examples. The milk mixture is pasteurized at 92° C. for 6 minutes. In line homogenization takes place in the heating part of the pasteurizer at 60° C., in two stages of 80 and 40 bar. The homogenized, pasteurized milk is cooled back to the fermentation temperature (38° C.) and inoculated with the culture to be tested at a rate of 0.02% (w/w). Once a pH of 4.60 is reached, the yogurt is smoothened by pumping the yogurt through a sieve (pore size 500 µm). The yogurt is then filled out into suitable containers. The yogurt cups are then stored at 4° C.

### 4. Yogurt Recipes

**[0083]** The following recipes were used in the Examples. All additions are wt % of the total milk recipe.

TABLE 3

Yogurt recipes							
Ingredient (%)	Recipe						
	A	B	C	D	E	F	G
Skimmed Milk	96.0	81.6	82.2	87.7	0	0	0
Semi skimmed Milk	0	0	0	0	91.4	90.1	88.7
Skimmed Milk Powder	0.4	0.0	6.3	1.0	0.9	2.2	3.6
Cream (39% fat)	3.6	3.8	3.8	3.6	0	0	0
Sucrose	0.0	7.7	7.7	7.7	7.7	7.7	7.7
Demineralized water	0.0	6.9	0.0	0.0	0	0	0
Fat concentration	1.4	1.5	1.5	1.4	1.4	1.4	1.4
Protein concentration	3.5	2.9	5.1	3.5	3.4	3.8	4.2

### 5. Shear Stress of Yogurt

**[0084]** The samples were measured using a Physica MCR501 rheometer equipped with a concentric cylinder measurement system (CC-27). A solvent trap was used to prevent evaporation of water as much as possible. Yogurt samples are stored at 4° C. and are taken out of storage just prior to measuring in the rheometer, with the containers having to be handled with extreme care (as any sudden movements might damage the yogurt microstructure and thus lead to differences in results). As shown in FIG. 5, the closed container is turned from an upright position to a tilted one with an angle of 100°, so that the container lid is now the lowest point. At this point, one has to turn the container 3 times around its axis (3×360°, ~4 seconds per revolution), to slightly stir the yogurt without really damaging its structure. Subsequently the container is turned back into a normal upright position and can be opened. Once opened, one has to ascertain that there is no dried in material at the top of the container: if that is the case, this dried in material needs to be removed on one side (the side along which the yogurt will be poured). The container can then be slightly turned again to its side till the yogurt level reaches the top of the container

at which time the yogurt can be gently spooned out of and over the top of the container into the measuring cup. Once filled the measuring cup is placed into the Physica Rheometer and superfluous material is removed by using a pipette. The procedure to load the yogurts takes about two minutes. Care needs to be taken to treat all different samples in exactly the same way, since difference in loading conditions can cause differences in the relative ranking of the yogurts. Before measurement the samples were allowed to rest and heat/cool to the measuring temperature (25° C.) for 5 minutes.

**[0085]** A standard experimental protocol was applied consisting out of the following two measuring sequences:

**[0086]** 1. A strain sweep to determine the initial gel strength (dynamic shear modulus): this is an oscillatory test where at a fixed angular frequency ( $\omega=10$  rad/s) an increasing amplitude is applied: on a logarithmic scale the amplitude is increased from 0.01 to 100% with 5 measuring points per decade.

**[0087]** 2. After the strain sweep the yogurts are allowed to rest for 30 seconds in the rheometer and subsequently a shear rate sweep is applied to determine the shear stress in mouth: This consists of applying an increasing shear rate to the yogurts ranging from 0.001 to 1000 s<sup>-1</sup> on a logarithmic scale with 3 measuring points per decade (no fixed time setting: the rheometer software determines the required shearing time per measuring point).

This experiment gives a flow curve whereby the measured stress is plotted as a function of the applied shear rate. This curve can then be combined with literature data to determine the relevant shear stress in the mouth as explained in the following.

**[0088]** By sensory panelling of various food products Shama and Sherman identified windows of instrumental shear stresses and shear rates corresponding to products with similar thickness ratings but different shear-thinning behavior. These windows correspond to the rheological regimes applied in the mouth during thickness rating. The governing shear rate was shown to be dependent on the viscosity of the product itself. (see FIG. 1 from Shama, F. and Sherman, P. Journal of Texture Studies, 4, 111-118. (1973), “*Identification of stimuli controlling the sensory evaluation of viscosity II oral methods*”).

**[0089]** For the yogurts of the examples below the (predicted) shear stress in the mouth is determined by plotting the experimentally measured flow curves (measured shear stress in function of applied shear rate of the shear rate sweep experiment described above) onto the aforementioned FIG. 1 from Shama and Sherman. The predicted shear stress in the mouth is defined as the cross-over between the measured flow curves and the upper bound of the “shear rate shear stress” windows of FIG. 1 of Shama and Sherman. In FIG. 2 the authors give examples for various food stuffs. The thus derived shear stress gave a good correlation with the sensory perception of thickness in the mouth.

### 6. Brookfield

**[0090]** Viscosity measurement were performed using a Brookfield RVDVII+ Viscometer, which allows viscosity measurement on an undisturbed product (directly in the pot). The Brookfield Viscometer determines viscosity by measuring the force required to turn the spindle into the product at a given rate. The Helipath system with a T-C spindle was used as it is designed for non-flowing thixotropic material